

Application No. 10/766,939
Reply to Office Action dated May 16, 2006

Attorney Docket No. FS-F03228-01

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1. (Currently amended): An image forming method comprising:

image-wise exposing to a radiation source a photothermographic material comprising, on a same surface of a support, a photosensitive silver halide having a silver iodide content of 40 to 100 mol%, a non-photosensitive organic silver salt, a reducing agent, a binder, and an adsorbable redox compound represented by Formula (I), wherein, in Formula (I), A represents a group that can be adsorbed by silver halide; W represents a divalent connecting group; n represents 0 or 1; B represents a reducing group that is capable of reducing silver ions and is a residue derived from a compound represented by any one of Formulas B₁ to B₅ and Formula B₁₃; and

thermally developing the image-wise exposed photothermographic material with a developing time of 1 to 12 seconds;

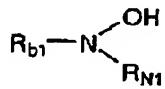
wherein in Formulas B₁ to B₅ and in Formula B₁₃, R_{b1}, R_{b2}, R_{b3}, R_{b4}, R_{b5}, R_{b13}, R_{N1}, R_{N2}, R_{N3}, R_{N4} and R_{N5} each independently represent a hydrogen atom, an alkyl group, an aryl group or a heterocyclic group; R_{H3}, R_{H5}, R'_{H5}, and R_{H13} each independently represent a hydrogen atom, an alkyl group, an aryl group, an acyl group, an alkylsulfonyl group or an arylsulfonyl group, in which R_{H3} may alternatively represent a hydroxy group; R_{b130} to R_{b133} each independently represent a hydrogen atom or a substituent; and m₅ represents 0 or 1;

Formula (I) A-(W)_n-B

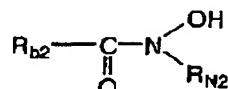
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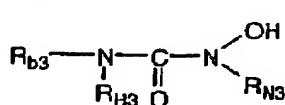
(B₁)



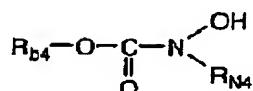
(B₂)



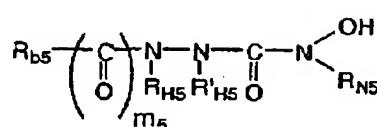
(B₃)



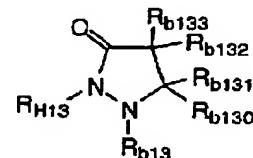
(B₄)



(B₅)



(B₁₃)



wherein the photothermographic material further includes a compound represented by the following formula (H):

Formula (H) Q-(Y)_n-C(Z₁)(Z₂)X

wherein in formula (H), Q represents an alkyl group, an aryl group or a heterocyclic group; Y represents a divalent connecting group; n represents 0 or 1; Z₁ and Z₂ each independently represent a halogen atom; and X represents a hydrogen atom or an electron attracting group.

2. (Original): The image forming method according to claim 1, wherein the developing time is 2 to 10 seconds.

3. (Original): The image forming method according to claim 1, wherein the thermal development is conducted at a temperature of 80 to 250 °C.

4. (Original): The image forming method according to claim 1, wherein the thermal development is conducted at a temperature of 100 to 140 °C.

5. (Original): The image forming method according to claim 1, wherein the photothermographic material further includes an antifogging agent.

6. (Original): The image forming method according to claim 1, wherein the photosensitive silver halide has an average grain size of 5 to 50 nm.

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7. (Original): The image forming method according to claim 1, wherein the photothermographic material further includes a development accelerator.

8. (Cancelled.)

9. (Original): The image forming method according to claim 1, wherein the photothermographic material further includes a toning agent.

10. (Original): The image forming method according to claim 1, wherein the photothermographic material further includes a ultra-high contrast agent.

11. (Original): The image forming method according to claim 1, wherein the photothermographic material further includes a matting agent.

12. (Currently amended): The image forming method according to claim 1, wherein the radiation source is was a laser.

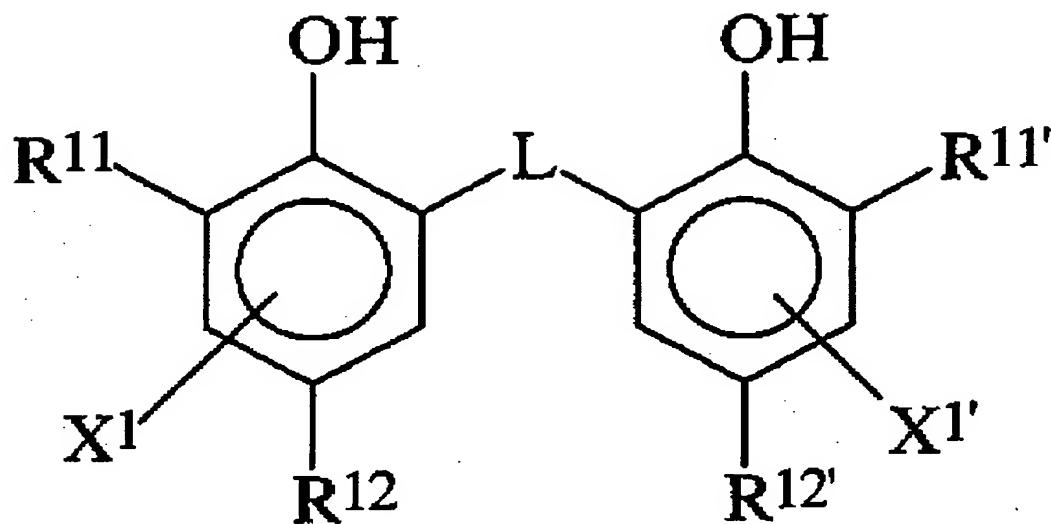
13. (Currently amended): The image forming method according to claim 12 †, wherein the laser has a light emission peak intensity within a wavelength range of 350 to 450 nm.

14. (Original): The image forming method according to claim 1, wherein the reducing agent is a compound represented by the following formula (R-1):

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Formula (R-1)



wherein in formula (R-1), R¹¹ and R^{11'} each independently represent an alkyl group having 1 to 20 carbon atoms; R¹² and R^{12'} each independently represent an alkyl group having 2 to 20 carbon atoms; L represents a -S- group or a -CHR¹³- group; R¹³ represents a hydrogen atom or an alkyl group having 1 to 20 carbon atoms; X¹ and X^{1'} each independently represent a hydrogen atom or a group that can substitute a benzene ring.

Claims 15-20 (Cancelled.)

21. (Previously presented): The method of claim 1 wherein the silver halide has a silver iodide content of 80 to 100 mol%.

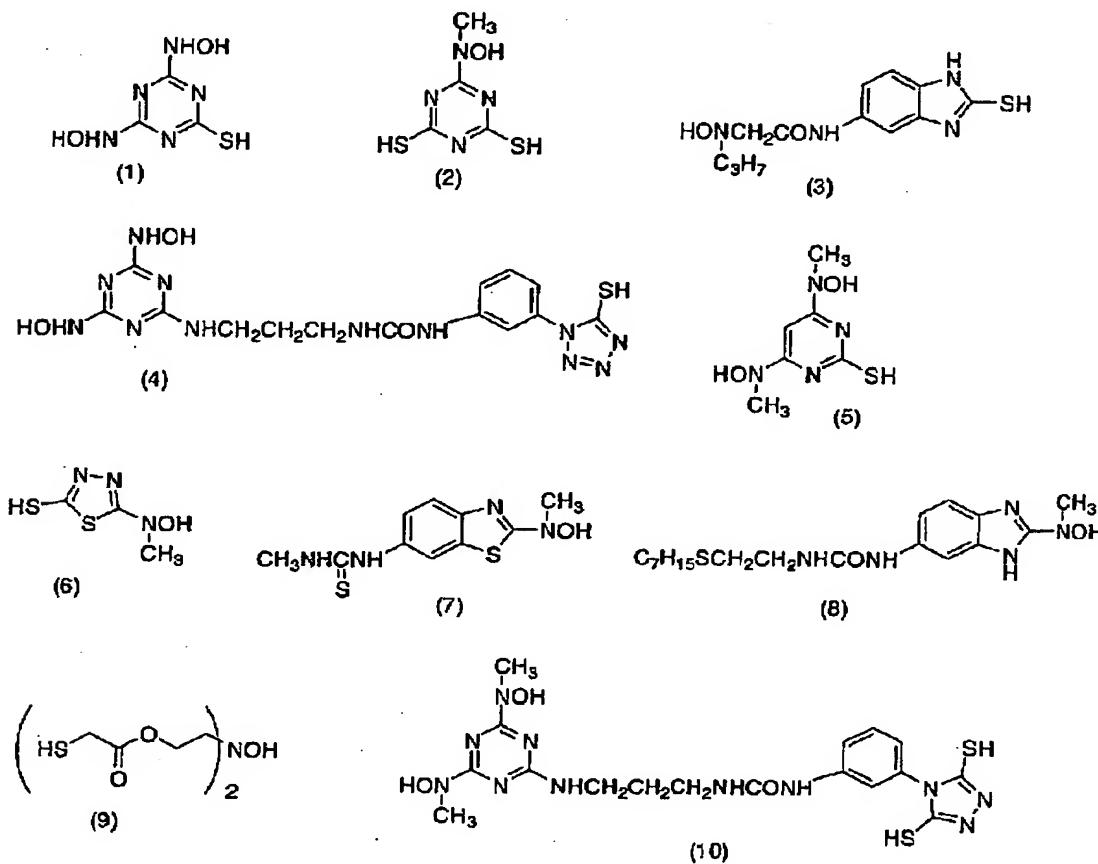
22. (Previously presented): The method of claim 1 wherein the silver halide has a silver iodide content of 90 to 100 mol%.

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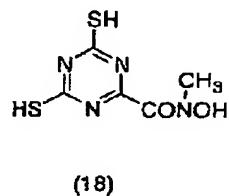
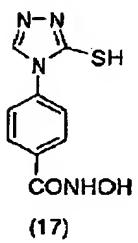
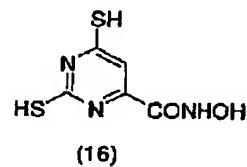
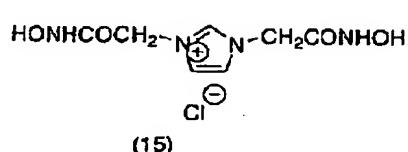
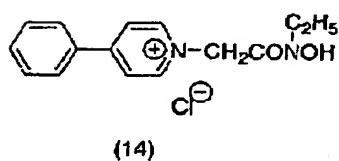
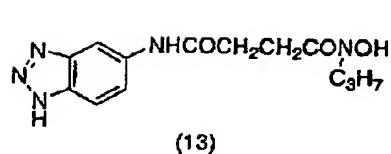
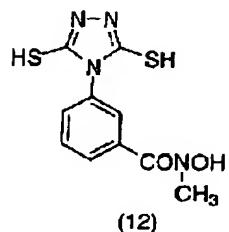
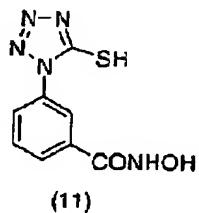
23. (Previously presented): The method of claim 1, wherein an adsorbable group represented by A is a mercapto group, a salt thereof, a thion group (-C(=S)-), a heterocyclic group containing at least an atom selected from a nitrogen atom, a sulfur atom, a selenium atom and a tellurium atom, a sulfide group, a disulfide group, a cationic group, or an ethynyl group.

24. (Previously presented): The method of claim 1, wherein the adsorbable redox compound is represented by any of the following formulas (1) to (38) and (71) to (81):



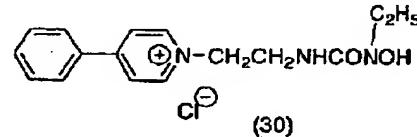
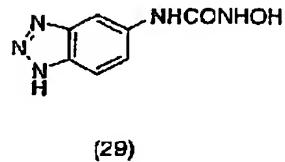
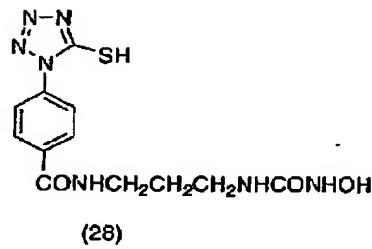
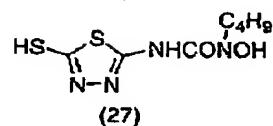
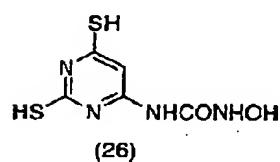
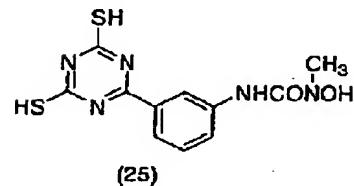
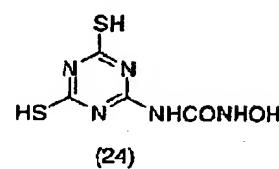
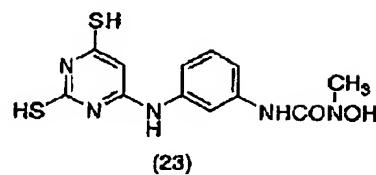
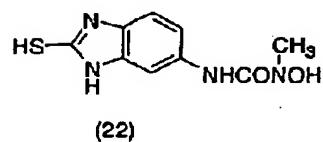
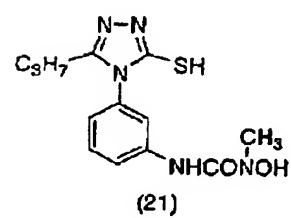
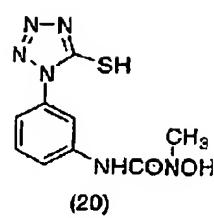
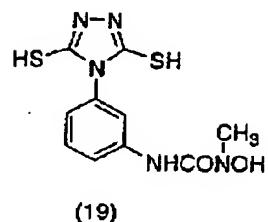
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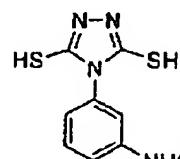
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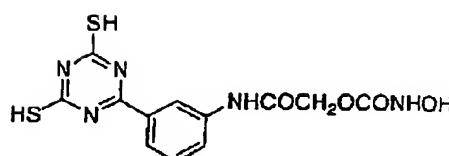
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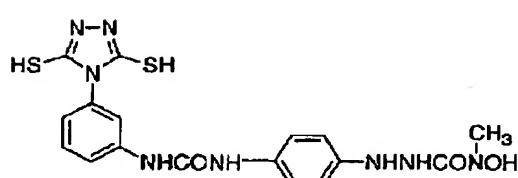
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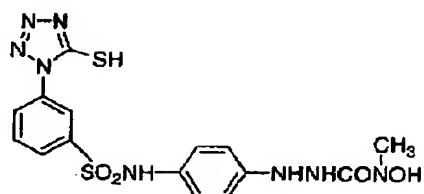
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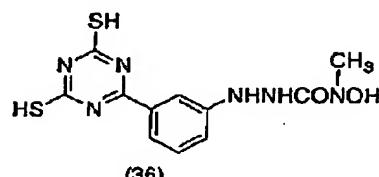
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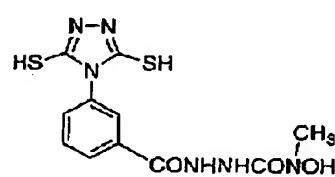
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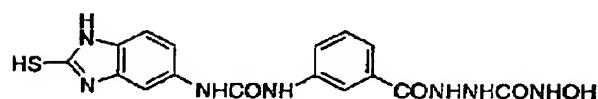
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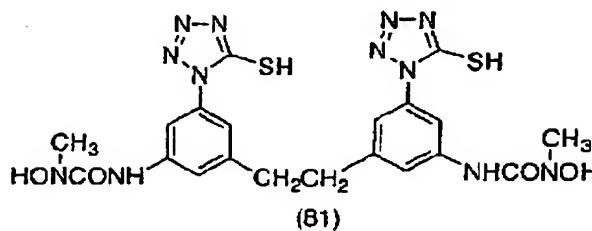
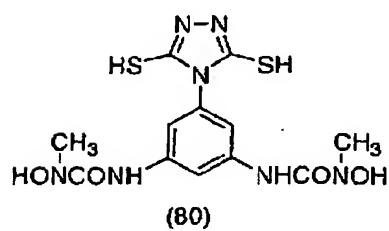
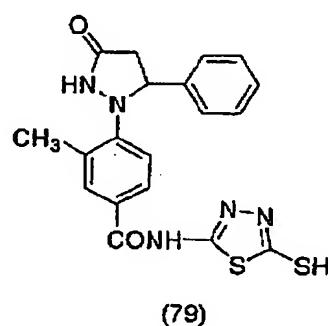
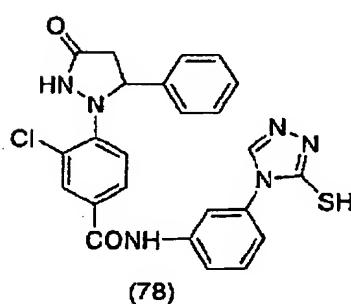
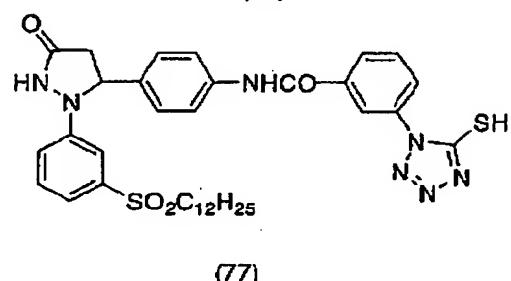
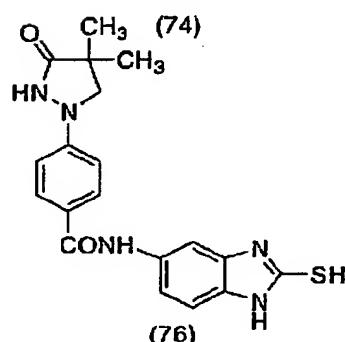
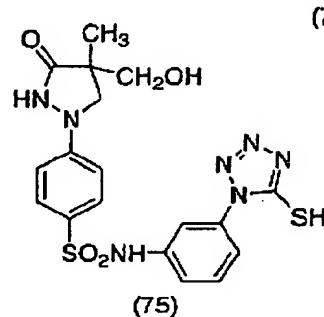
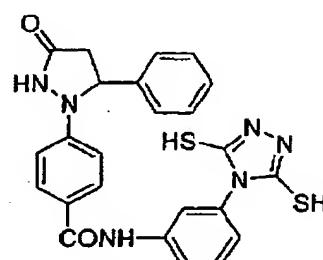
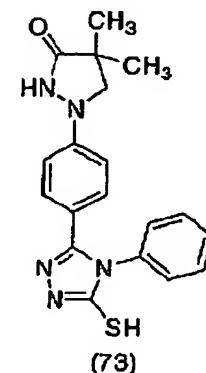
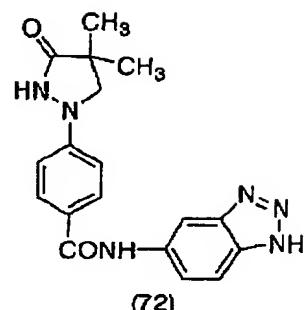
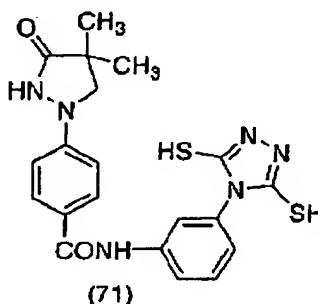
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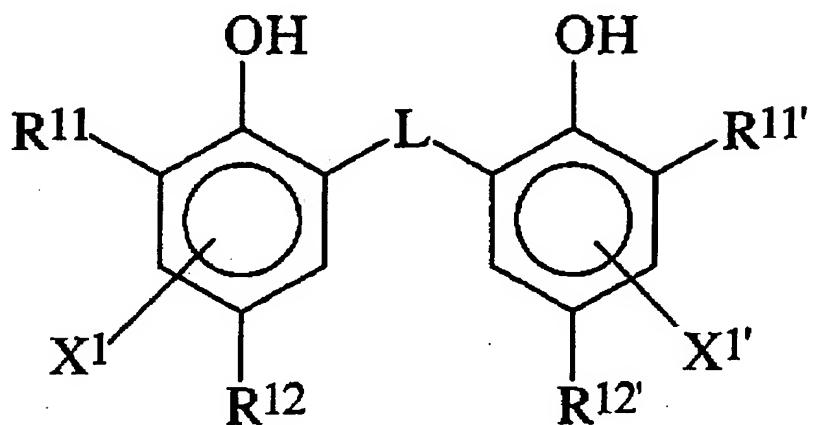


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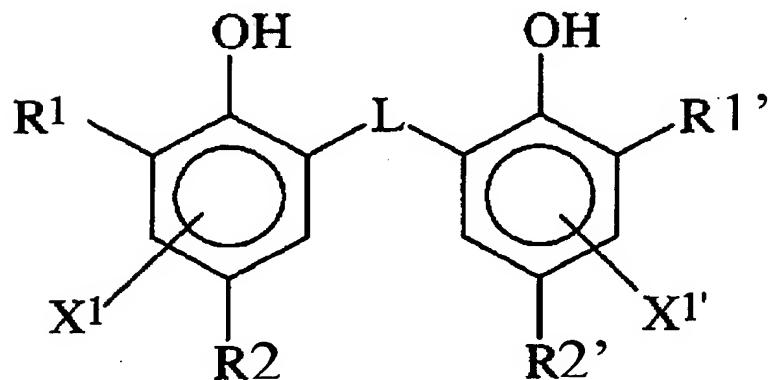
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25. (Previously presented): The method of claim 1, wherein the reducing agent is at least one compound selected from the group consisting of Formula (R-1) and Formula (R-2):

Formula (R-1)



Formula (R-2)



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wherein in formula (R-1), R¹¹ and R^{11'} each independently represent an alkyl group having 1 to 20 carbon atoms; R¹² and R^{12'} each independently represent an alkyl group having 2 to 20 carbon atoms; L represents a -S- group or a -CHR¹³- group; R¹³ represents a hydrogen atom or an alkyl group having 1 to 20 carbon atoms; X¹ and X^{1'} each independently represent a hydrogen atom or a group that can substitute a benzene ring; and wherein

in formula (R-2), R¹ and R^{1'} each independently represent an alkyl group having 3 to 20 carbon atoms and including a secondary or tertiary carbon atom bonded to the benzene ring; R² and R^{2'} each independently represent a methyl group; L represents -S- or -CHR³-; R³ represents a hydrogen atom or an alkyl group with 1 to 20 carbon atoms; and X¹ and X^{1'} each independently represent a hydrogen atom or a group that can substitute the benzene ring.

26. (Previously presented): The method of claim 1, wherein the photothermographic material further comprises a compound represented by the following formula (H):

Formula (H) Q-(Y)_n-C(Z₁)(Z₂)X

wherein in formula (H), X is a bromine atom; Y is SO₂; N is 1; and Q is an aryl group or a heterocyclic group.